

Public

Data Sharing Infrastructure

Pilot – Industry Show & Tell

16 May 2025

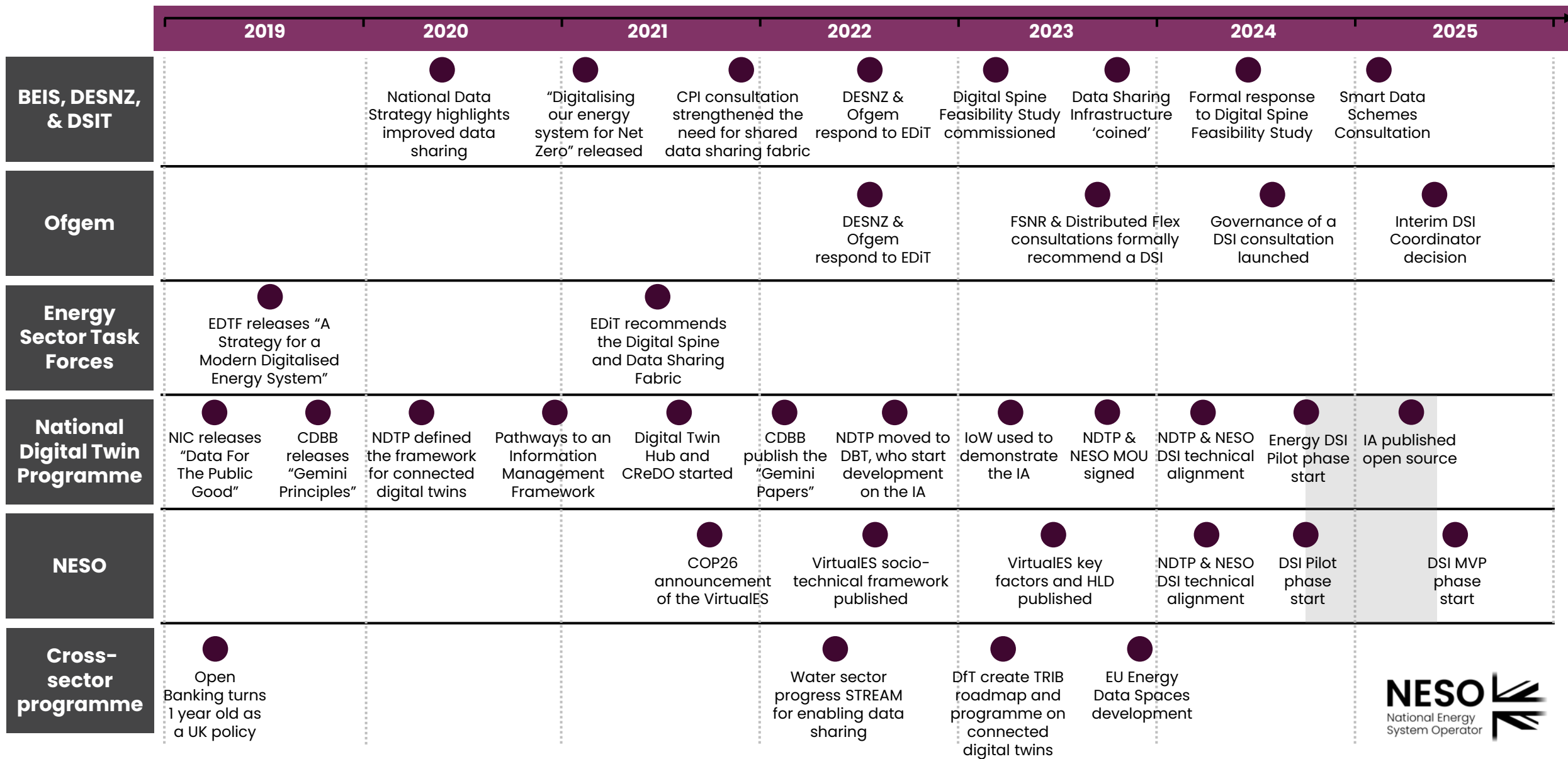
#1 Introduction



Simon Evans
Programme Director, NESO

Public

Publications & policies asking for improved data sharing



Data Sharing Infrastructure

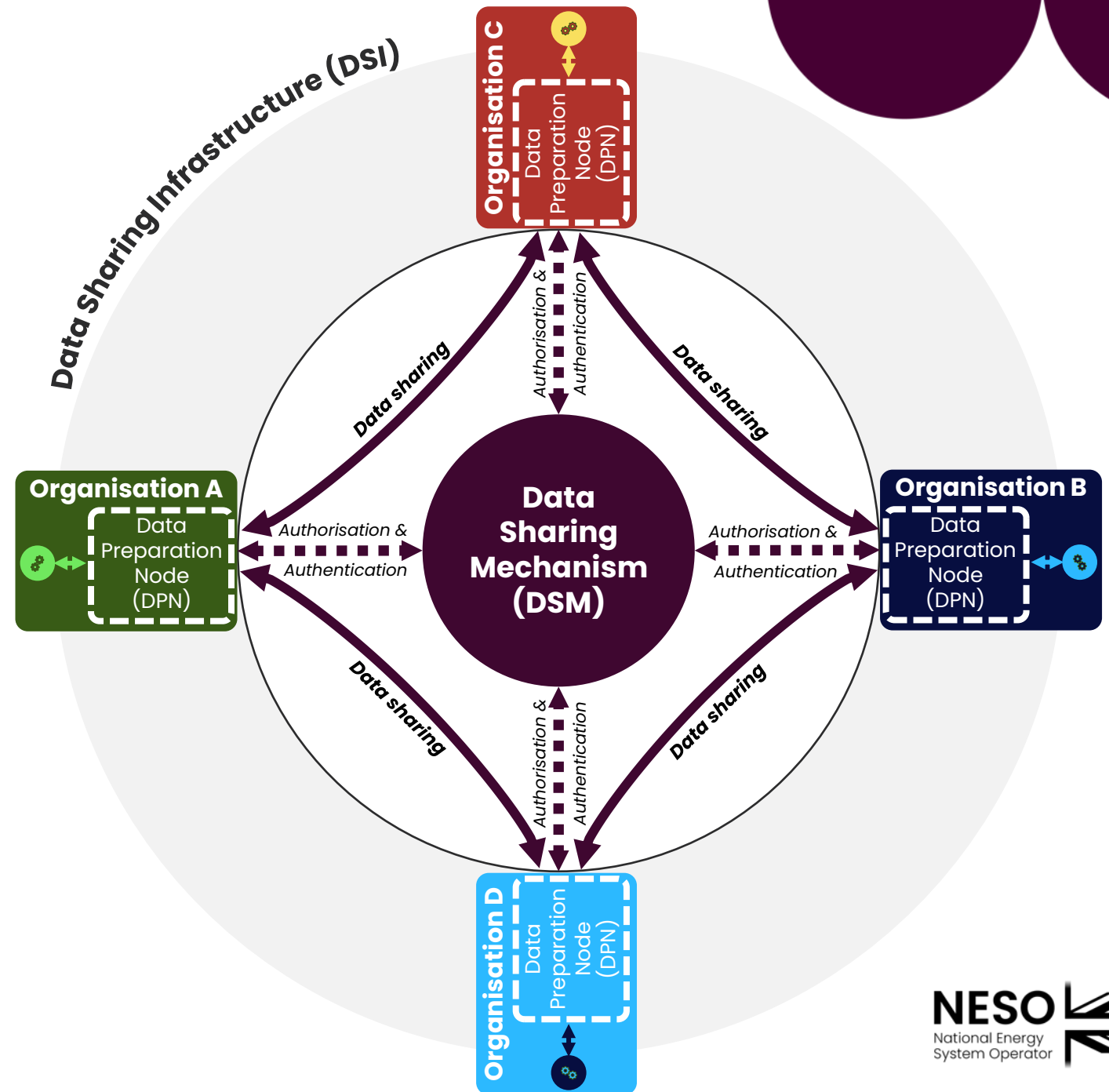
A **socio-technical** solution.

That reduces the **friction** and **barriers** to data sharing.

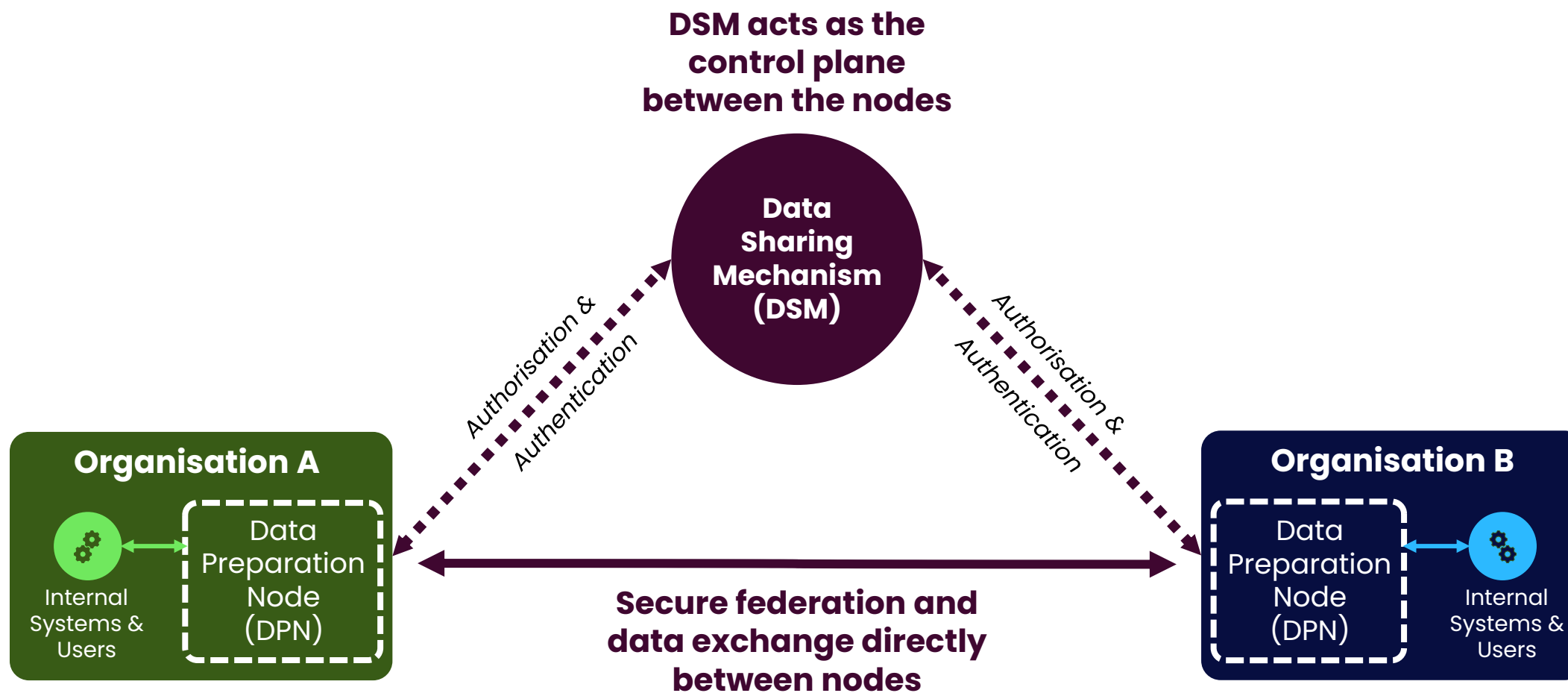
By providing a **secure, resilient,** and **scalable** method for sharing data and models between **any energy sector participants.**

Accelerating **trust, semantic interoperability** and facilitating **cross-sector** connectivity.

Enabling better **outcomes** for society, the environment, and the economy.



Data Sharing Interactions



Pilot phase – industry show & tell

Today's agenda:

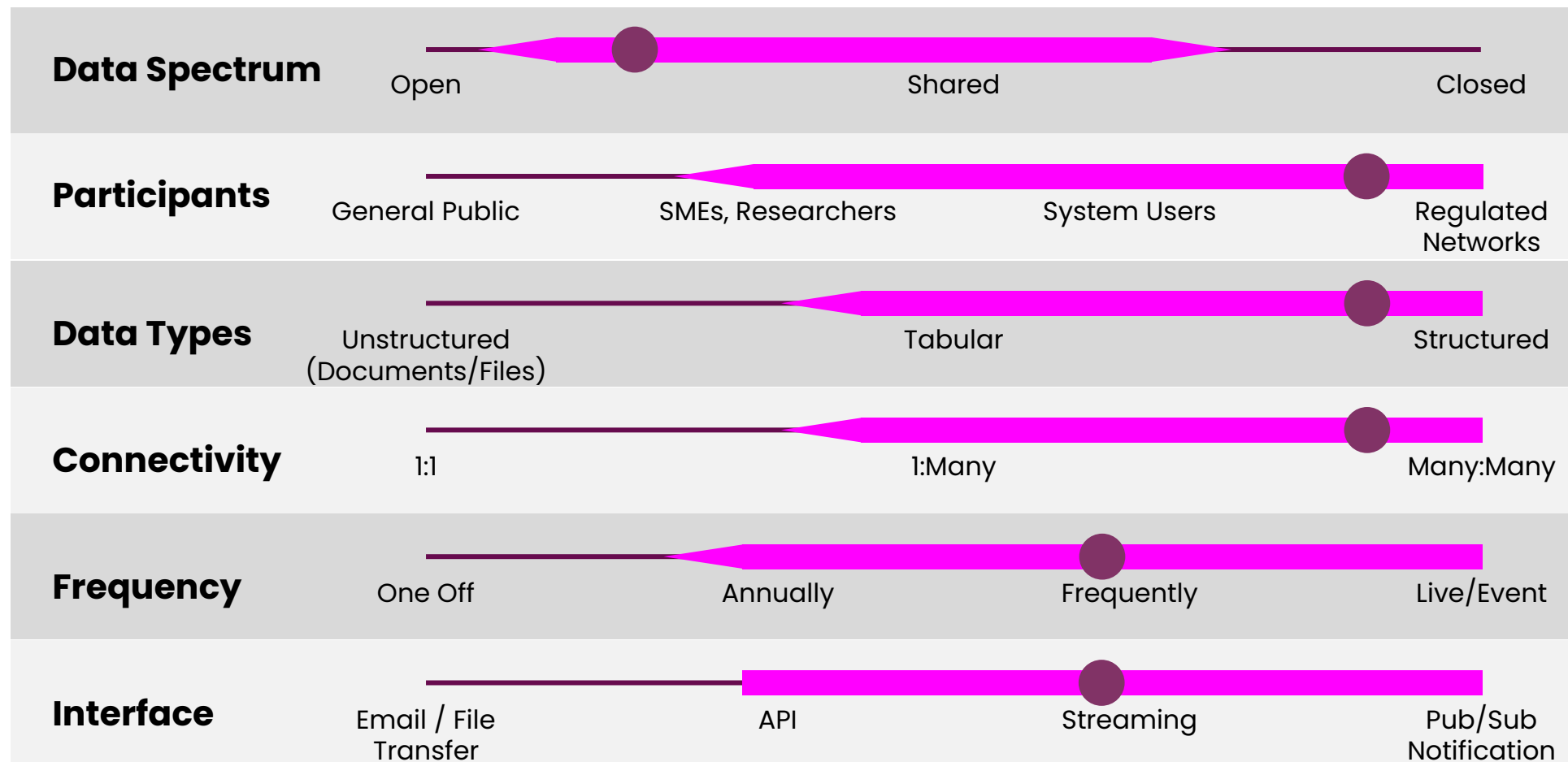
- What is the data sharing infrastructure
- The purpose and objective of the Pilot
- How the Pilot was technically delivered
- The Pilot trials, outcomes, and lessons learnt
- Next steps for the MVP
- Questions from the audience

#2 Pilot Overview



Jonathan Barcroft
Workstream Manager, NESO

Scope of the DSI



Pilot scope

DSI target capabilities

Possible but not target

Pilot Objectives



**Evaluate DSI value and
user journey validation**



**Deploy and configure
PoC of the DPN and the
DSM**



**Demonstrate secure
and standardised data
sharing**

Pilot Project Partners

Pilot leads



Network Partners



Delivery Partners



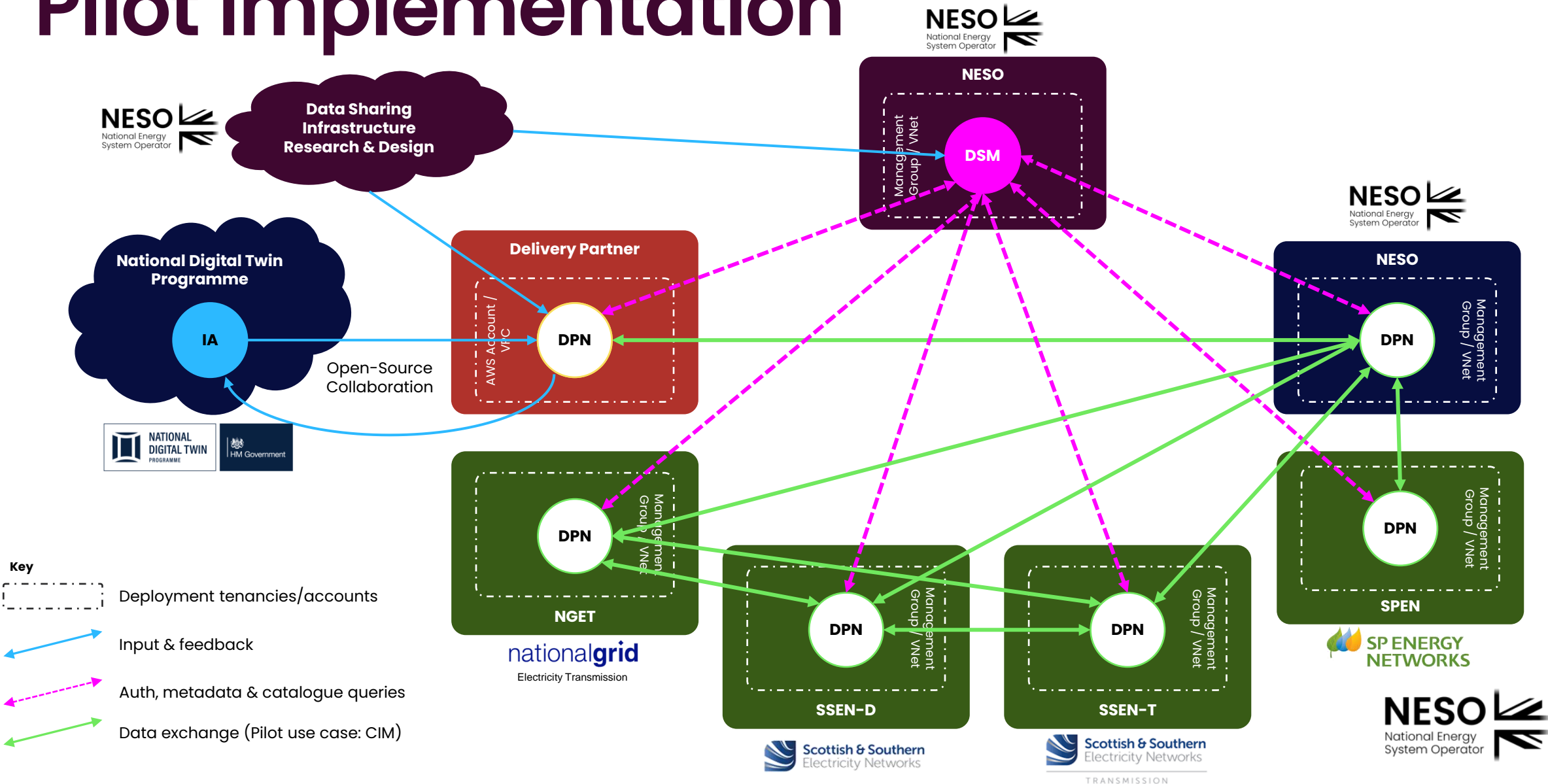
Observers



Department for
Energy Security
& Net Zero



Pilot Implementation



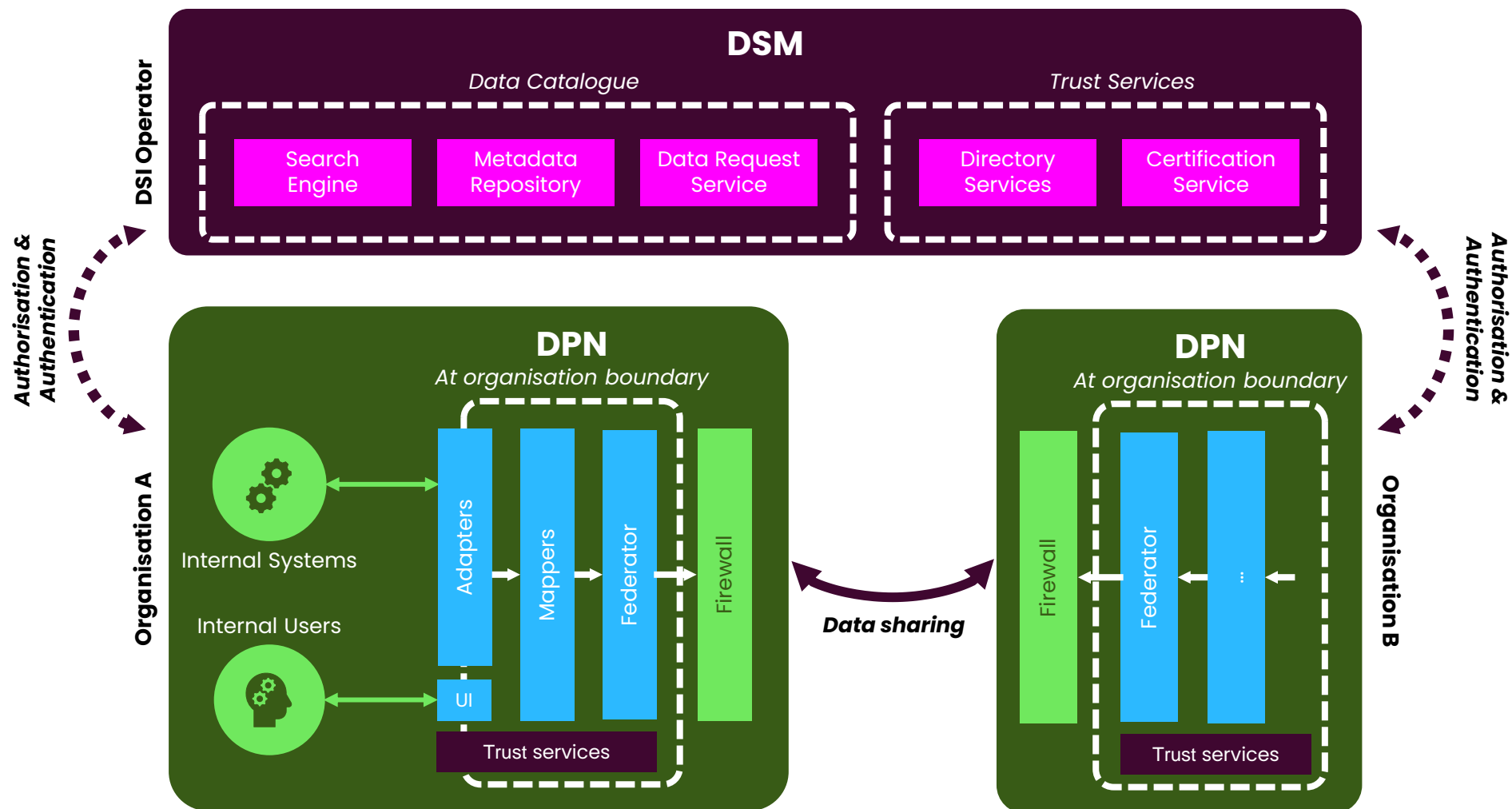
#3 Pilot Technical Delivery



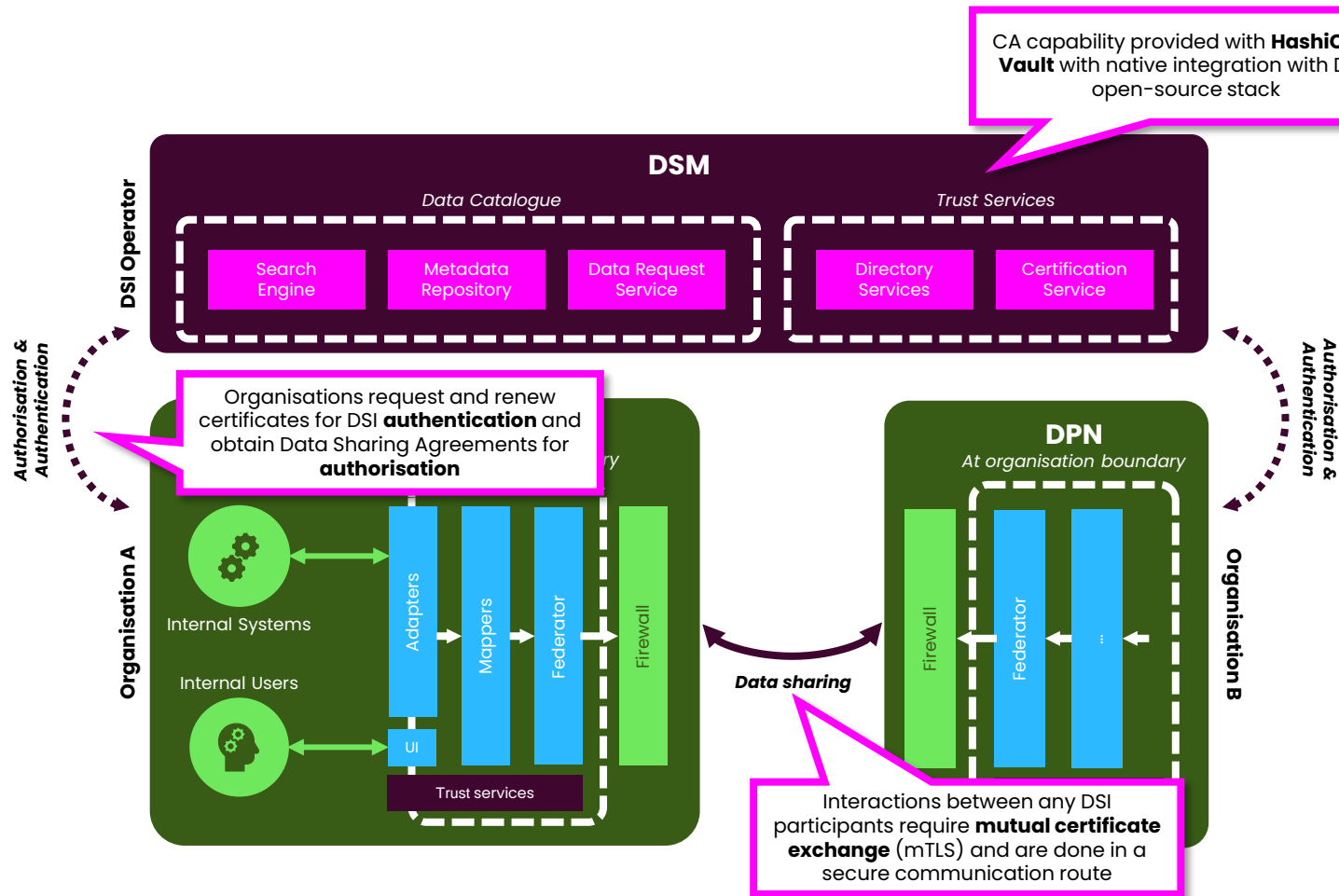
Bruno Parra

Principal Data Consultant, Mesh-AI

DSI Pilot Technical Delivery



DSI Pilot Technical Delivery

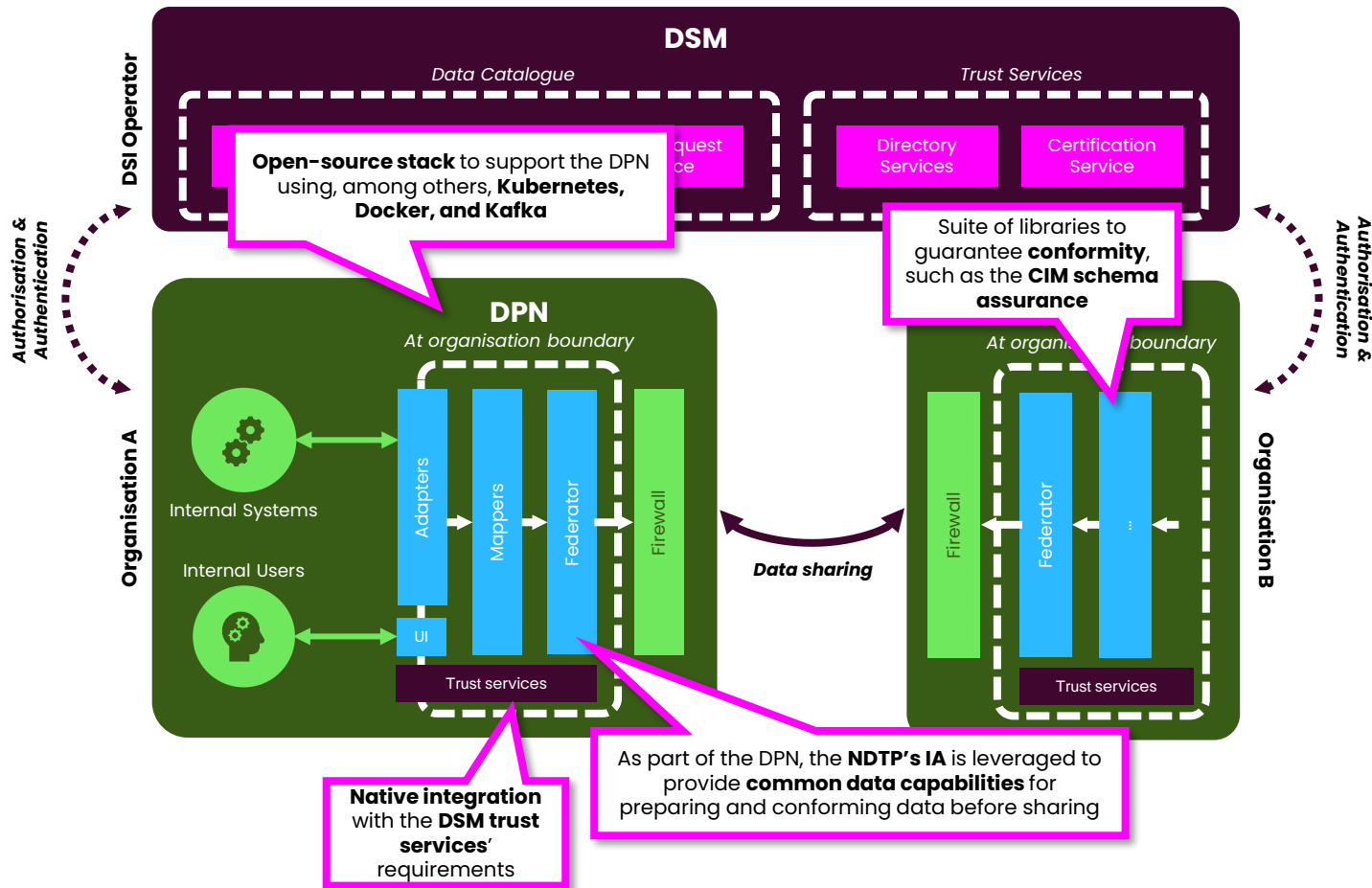


Secure data exchange

Participants abide to **common security standards** to guarantee secure communications between all involved parties - with the DSM providing the core foundations via the **Trust Services**.

1. Certificate-based Authentication between all parties with the DSM as the Certificate Authority (CA).
2. Allow organisations to establish trust with the DSM and participate in the DSI.
3. Enforce mTLS based authentication for all communications between two parties (including the DSM).
4. Decentralised authorisation with Data Sharing Agreements.

DSI Pilot Technical Delivery

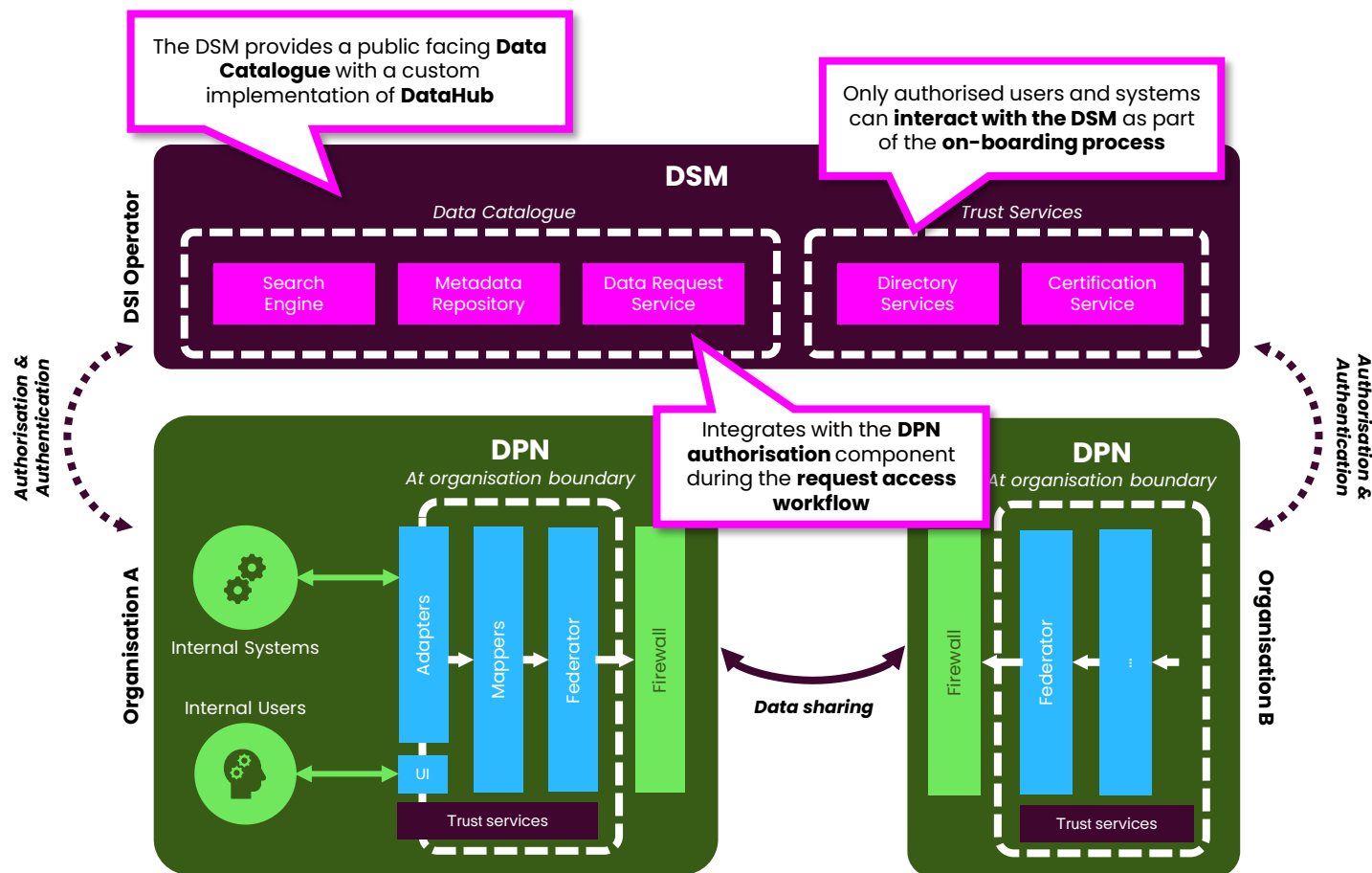


Open-sourced based DPN

In collaboration with NDTP, participants are given an **open-source based DPN** solution - providing an out-of-the-box **compliant and integrated** data platform for the DSI.

1. Bring your own infrastructure or use the DSI blueprints for Cloud deployments.
2. Data ingestion, integration, exchange, and pipeline capabilities to manipulate and vehiculate data with the NDTP's IA.
3. Guarantee conformity and quality with schema validation capabilities, e.g., CIM compliance.
4. Natively integrates with the DSM security requirements.

DSI Pilot Technical Delivery



Data Product Catalogue

Participants can **share data** with the Industry by publishing Data Products into the DSM's **Data Catalogue**.

Participants that want access to published Data Products can also use the DSM Data Catalogue to **request access**.

1. Register into ecosystem of trusted participants provided by the DSI.
2. Publish, search, and request access to Data Products.

#4 Trial Overview

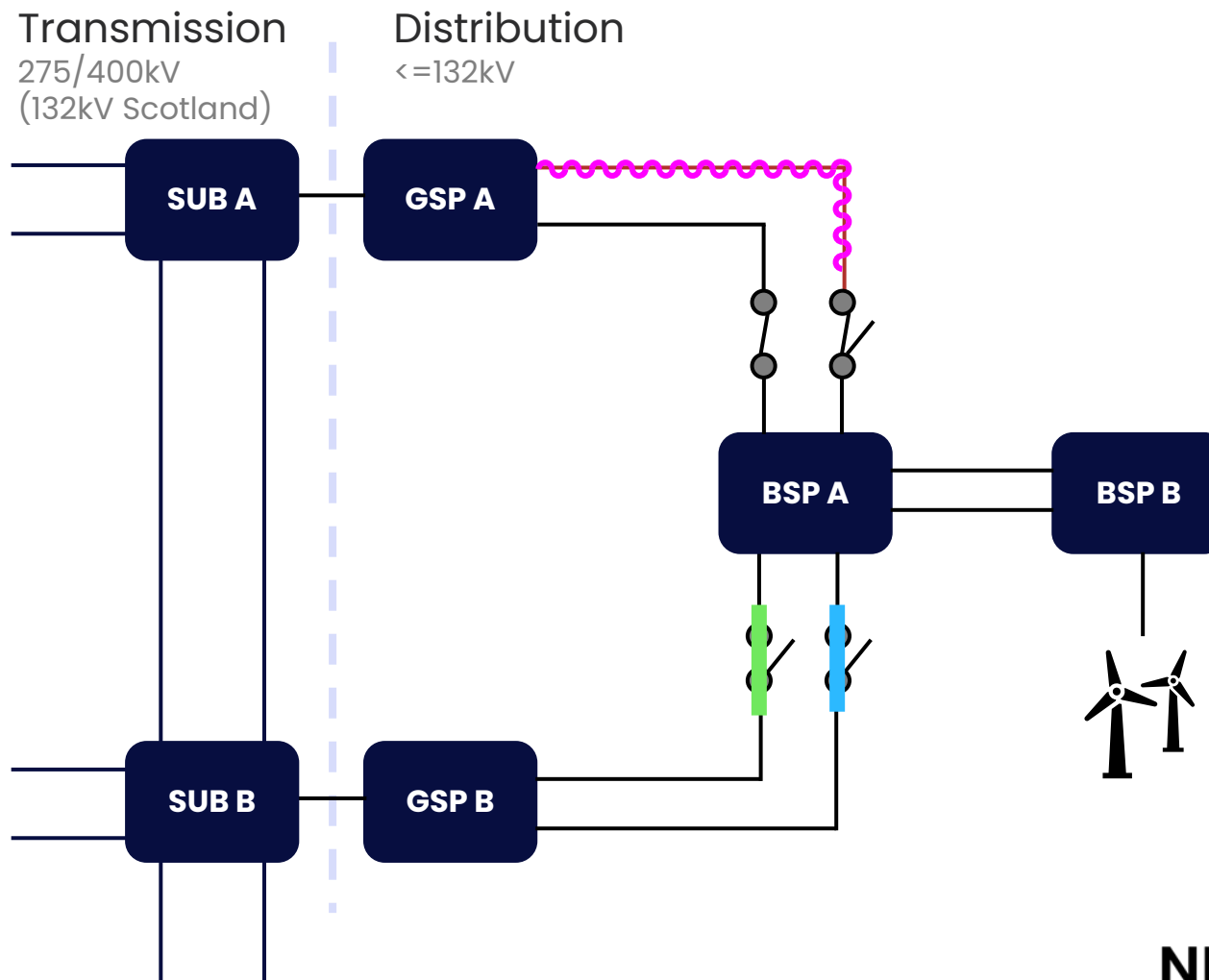


Beatrice Nassi
Lead Delivery Manager, Arup

Pilot Use Case

Operational Planning Pilot Use Case

Explore data exchange between DSOs, TOs, and NESO to support coordination of operational planning



Trial Regions

SOUTH EAST OF ENGLAND (Bramley-Fleet):

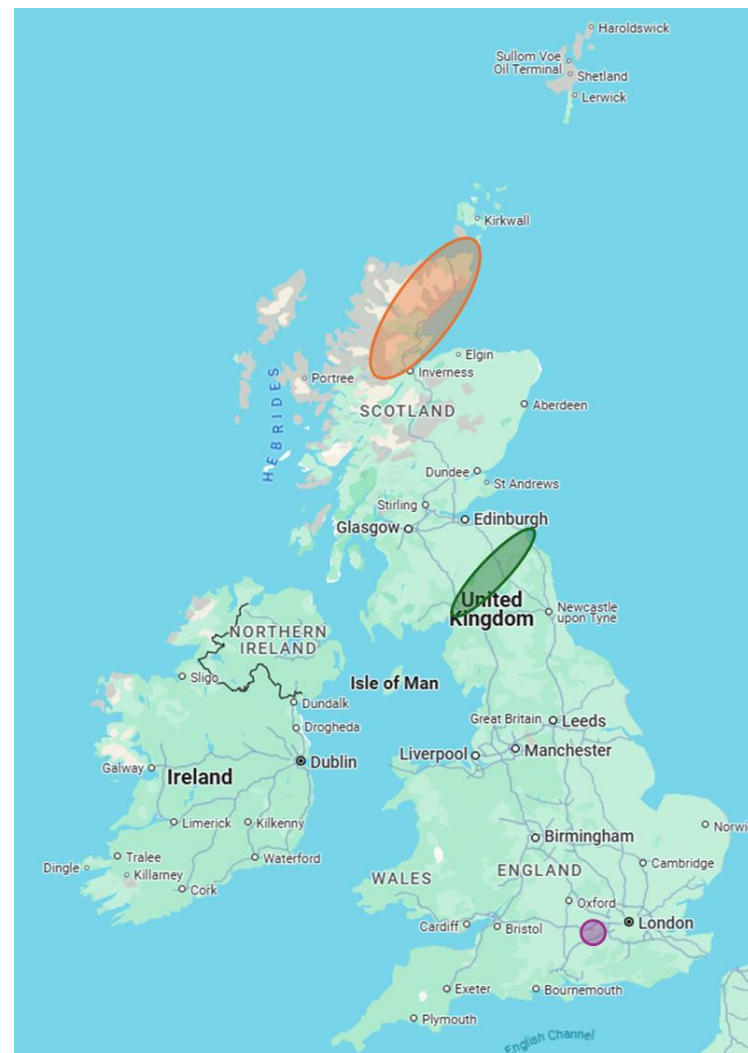
NGET	SSEND	NESO
-------------	--------------	-------------

NORTH SCOTLAND (Caithness):

SSENT	SSEND	NESO
--------------	--------------	-------------

SOUTH SCOTLAND (Hawick-Berwick):

SPENT	SPEND	NESO
--------------	--------------	-------------



Google Maps 2025

Trial Data Exchanges

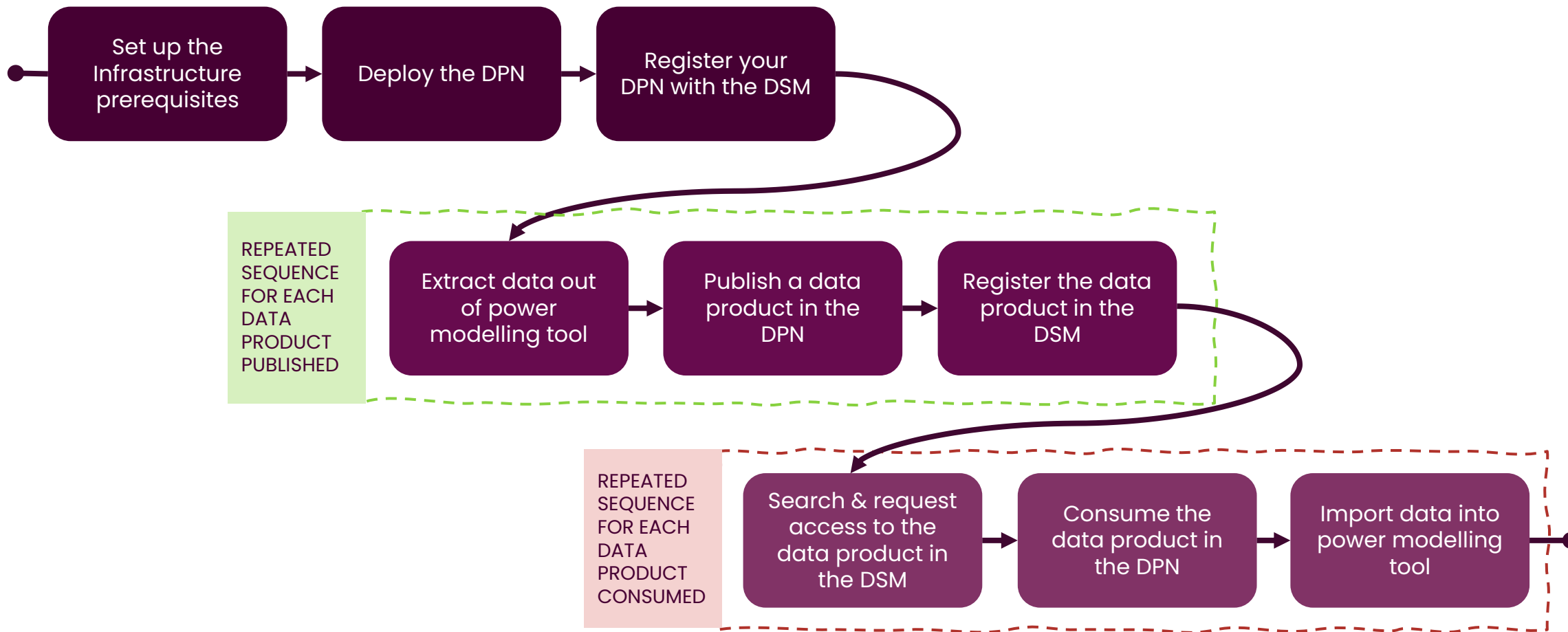
Per region, participants exchanged (publishing and consuming) a total of **7 data products**.

These included:

- **EQ** – Equipment Profile
- **EQ-BD** – Equipment Boundary
- **SSH** – Steady State hypothesis

		DNO	TO	NESO
Publish	Establish a Base Model	EQ	EQ	EQ-BD
	Develop Operational Scenario	SSH (x2)		SSH (x2)
Consume	Establish a Base Model	EQ-BD, EQ	EQ-BD, EQ	EQ (x2)
	Develop Operational Scenario		SSH (x2)	SSH(x2)

Trial Flows



Key Achievements

- **Built and tested** a PoC for the Data Sharing Mechanism
- **Built and tested** a PoC for the Data Preparation Node
- **Executed** secure data exchange
- **Retained** data integrity with schema validation
- **Recognised** business value
- **Supported** industry changes
- **Reusable** schema validation component

Key Challenges

- **Complex** DPN deployment process
- **Complex** DPN data pipeline configuration
- **Unreliability** of federator component
- **Restrictive** file size issue
- **Delayed** technical resource identification
- **Limited** UI, automation and monitoring for the DPN
- **Additional steps** needed due to deployment in test environments

Trial Learnings

- **Continue** **hands-on testing** and evolution of the DSI
- **Review** the **technical solution design** of the **DPN** PoC
- **Develop** a **flexible implementation** tailored to the variety of organizations' data strategies and maturity levels
- **Focus on core functionalities** that deliver value **across multiple use cases** to build a flexible and scalable architecture that can adapt to evolving requirements
- **Create** a **repository** of accessible, clear, and comprehensive **documentation** to support the adoption of the DSI

Public

#5 Pilot Demo



Jonathan Barcroft
Workstream Manager, NESO

**The DSI Pilot demo is
included in the session
recording that has
been uploaded to the
NESO website**

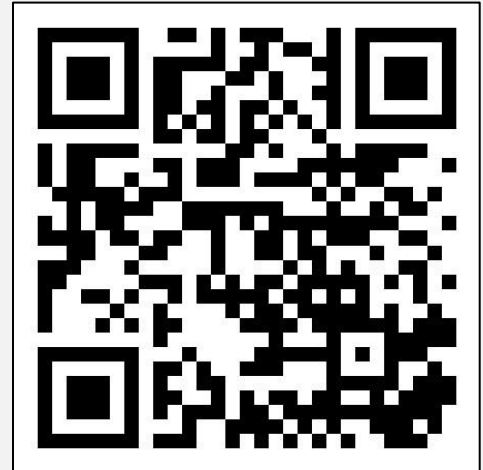
#6 Our Next Steps



Simon Evans
Programme Director, NESO

All questions via Slido
slido.com

Code: #DSIPilot



Our Immediate Next Steps

1

Pilot: Finalise reporting and share outputs

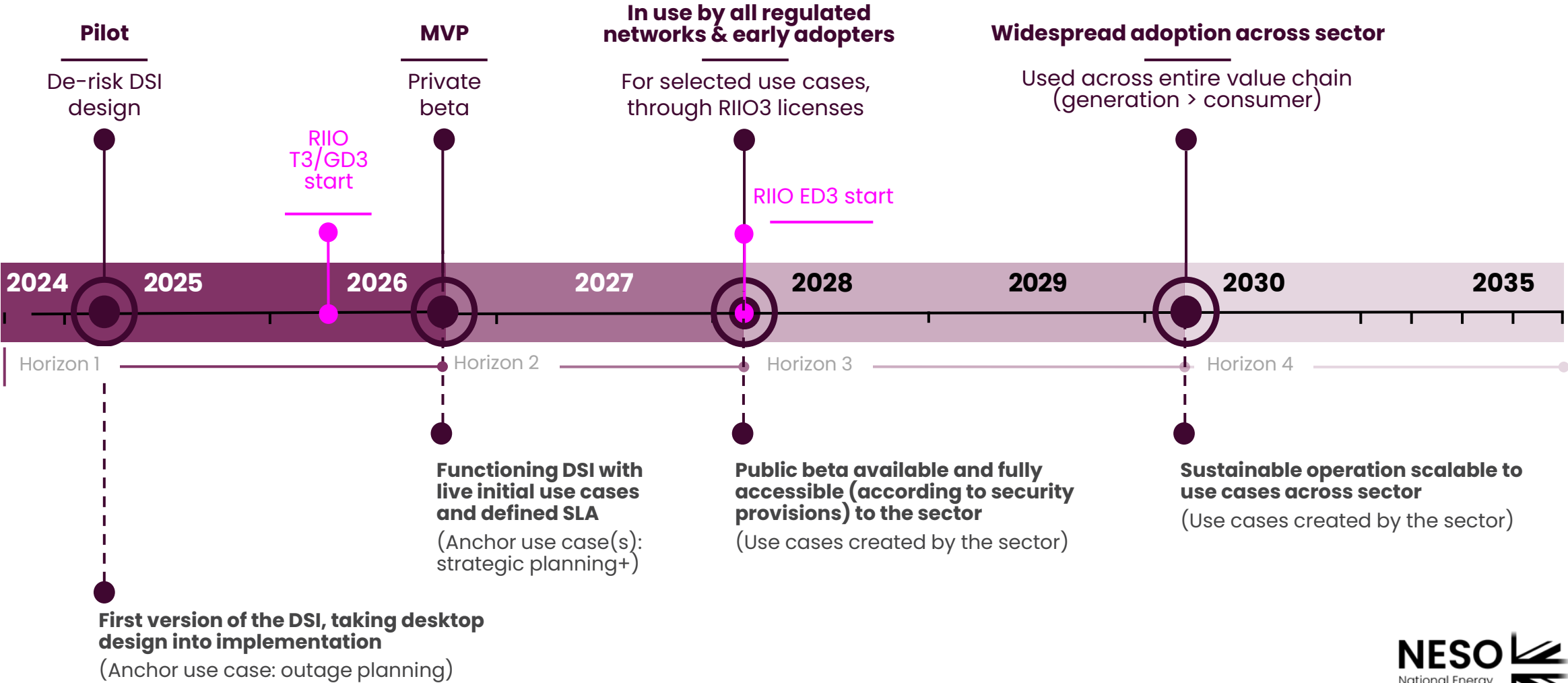
2

MVP: Preparation and mobilisation, including stakeholder engagement, planned technical forums, requirements & use case gathering

3

Governance: Establish Interim DSI Coordinator

DSI Roadmap



Thank you

Find out more:

VirtualES@nationalenergyso.com

www.neso.energy